What is Claimed:

1. A gas-liquid contact system, comprising:

a contactor, including contact media, a gas inlet and a gas outlet, a liquid inlet and a liquid outlet, wherein the liquid inlet admits liquid above the contact media and the gas inlet admits gas below the contact media, and the liquid and gas flow through the contact media such that the gas leaves through the gas outlet in saturated state;

a heater;

a chiller;

a gas outlet line connecting the gas outlet to the heater;

a liquid outlet line connecting the liquid outlet to the chiller, wherein the liquid flows in a closed loop through the liquid inlet, the contactor, the liquid outlet and the chiller;

a first gas temperature sensor associated with the gas outlet line and upstream of the heater;

a second gas temperature sensor associated with the gas outlet line and downstream of the heater; and

a controller coupled to the first and second gas temperature sensors and the heater, wherein the controller and adjusts the heater to deliver the gas at a desired temperature and relative humidity.

2. The system of claim 1, further comprising a sprinkler above the contact media to distribute the liquid uniformly on the contact media, a pump located between the chiller and the sprinkler to supply liquid to the sprinkler, and a gas blower to supply gas to the gas inlet.

3. The system of claim 2, wherein the housing is cylindrical in shape, and the sprinkler includes at least one arm with a plurality of orifices along the arm and pointed between parallel and opposite the top of the contact media and wherein the sprinkler engages in self-rotation from reactive force exerted against the arm(s) from distribution of the liquid from the orifices

4. The system of claim 1, further comprising a reservoir with a make-up inlet line to introduce liquid into the reservoir and a removal outlet line to remove liquid from the reservoir, a low sensor which generates a signal to a liquid supply means whenever the level of the liquid is low to supply additional liquid through the make-up inlet to the reservoir, a high sensor which generates a signal whenever the level of the liquid is too high to remove liquid through the removal inlet from the reservoir.

5. The system of claim 1, wherein the controller sends a signal to a liquid supply means to admit fresh liquid from the supply means at periodic times to maintain liquid purity requirements and such that the chiller can maintain the liquid at a desired temperature.

6. The system of claim 1, 2, 3, 4, or 5, wherein the contact media is tower packing.

7. A system of controlling the temperature, the relative humidity, and the cleanliness of air, comprising:

an air-water contactor, including a housing with contact media, an air inlet and an air outlet, a water inlet and a water outlet, wherein the water inlet admits a water above the contact media and the air inlet admits air below the contact media, and the water and air flow through the contact media such that the air leaves through the air outlet in saturated state;

a heater;

a chiller;

a filter;

an air outlet line connecting the air outlet to the heater;

a water outlet line connecting the water outlet to the chiller, wherein the water flows in a closed loop through the contactor and the chiller;

a first air temperature sensor associated with the air outlet line and upstream from the heater;

a second air temperature sensor associated with the air outlet line and downstream from the heater; and

a controller coupled to the first and second air temperature sensors, the heater, and the chiller, wherein the controller adjusts the heater and chiller to deliver air at a desired temperature and relative humidity, and wherein the filter is associated with the air outlet and downstream from the heater.

8. The system of claim 7, further comprising a sprinkler above the contact media to distribute the water uniformly on the contact media, a pump located upstream from the chiller to supply water to the sprinkler, and an air blower located between the heater and the filter.

9. The system of claim 8, wherein the housing is cylindrical in shape, and the sprinkler includes at least one arm with a plurality of orifices along the arm and pointed between parallel and opposite the top of the contact media and wherein the sprinkler engages in self-rotation from reactive force exerted against the arm(s) from distribution of the water from the orifices

10. The system of claim 7, further comprising a reservoir with a make-up inlet line to introduce water into the reservoir and a removal outlet line to remove water from the reservoir, a low sensor which generates a signal to a water supply means whenever the level of the water is low to supply additional water through the make-up inlet to the reservoir, a high sensor which generates a signal whenever the level of the water is too high to remove water through the removal inlet from the reservoir.

11. The system of claim 7, wherein the controller sends a signal to a water supply means to admit fresh water from the supply means at periodic times to maintain water purity requirements and such that the chiller can maintain the water at a desired temperature.

12. The system of claim 7, 8, 9, 10, 11, wherein the contact media is tower packing.

13. A controller adapted for obtaining gas at a desired temperature and relative humidity from a system, including a gas-liquid contactor, a gas heater connected to the contactor, a liquid chiller connected to the contactor, comprising:

a computer, including input means for a temperature set point and a relative humidity set point, a first compensator, a second compensator, a transformer taking the inputs of the temperature set point and relative humidity set point and generating a output to the second compensator, wherein the first and second compensators outputs control the heater and chiller, to obtain gas from the contactor in a desired tolerance of the temperature and relative humidity set points.

14. The controller of claim 13, wherein the computer further comprises a first PWM signal converter, wherein the first compensator is a first PID generating a first output signal, and wherein the first PWM signal converter converts the first PID output signal to a first command signal to adjust the heating rate of the heater.

15. The controller of claim 13, wherein the computer further comprises a second PWM signal converter, wherein the second compensator is a second PID generating a second output signal, and wherein the second PWM signal converter converts the second PID output signal to a second command signal to adjust the cooling rate of the chiller.

16. The controller of claim 13, wherein the transformer generates a saturation temperature set point from the temperature set point and the relative humidity set point, and wherein the computer includes a temperature dry bulb feedback loop, comparing the dry bulb temperature with the temperature set point, and a temperature saturation feedback loop, comparing the saturated temperature with the saturation temperature set point.

17. The controller of claim 13, wherein the computer includes a cooperative multitasking scheduler, which allocates when a task runs in the CPU of the computer so that each task is given processing time and passes back control to scheduler after completion of the task.

18. The controller of claim 13, 14, 15, 16, or 17, wherein the gas is air and the liquid is water.

19. A method for controlling the quality of air delivered to a local environment, comprising the steps of:

providing an input for temperature and relative humidity set points;

circulating water through a contactor, wherein the contactor includes a water inlet and outlet, an air inlet and outlet;

circulating air through the contactor, wherein the air in the contactor is in intimate contact with the water in the contactor, and the air at the air outlet is saturated;

measuring the dry bulb temperature of the air delivered to the local environment and the temperature of saturated outlet air; and

comparing the dry bulb temperature of the air with the temperature set point and generating a corresponding first signal.

20. The method of claim 19, further comprising the steps of:

transforming the temperature set point and the relative humidity set point into a saturation temperature set point; and

comparing the saturation temperature set point with the temperature of the saturated outlet air and generating a corresponding second signal; and adjusting the chiller in accordance with the second signal to bring the circulating water to the temperature which results in air delivered to the local environment to the value of the temperature and relative humidity set points.

21. The method of claim 19, further comprising the step of adjusting the heater in accordance with the first signal to bring the air delivered to the local environment to the value of the temperature and relative humidity set points.

22. The method of claim 20, further comprising transforming the first signal by a first PID compensator to a first command signal and converting the first command signal to a first pulse width modulated format for powering the heater.

23. The method of claim 19, further comprising transforming the second signal by a second PID compensator to a second command signal and converting the second command signal to a second pulse width modulated format for poweringthe chiller.